REMARKS

The Final Office Action dated May 31, 2007, and the Advisory Action dated August 17, 2007, have been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

By this response, claim 13, 24, 25, and 26 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claims 1-12 were previously canceled without prejudice or disclaimer. No new matter has been added. Support for the above amendments is provided in the Specification on at least page 10, line 21 to page 11, line 2, and page 13, line 31 to page 14, line 11. Accordingly, claims 13-26 are currently pending in the application, of which claims 13, 24, 25, and 26 are independent claims.

In view of the above amendments and the following remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending claim rejections for the reasons discussed below.

Claim Rejections under 35 U.S.C. §103(a)

The Office Action and the Advisory Action (collectively "Office Action") rejected claims 13-26 under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Guiver, *et al.* (U.S. Patent No. 5,809,490) ("Guiver") in view of Sirosh (U.S. Patent No.

6,226,408) ("Sirosh"). The Office Action alleged that Guiver discloses most of the claim elements recited in claims 13-25, citing Sirosh to cure the deficiencies of Guiver.

Amended claim 13, upon which claims 14-23 are dependent, recites a computer-implemented method. The method includes determining cluster centers in a first data structure, performing a first iterative process for iteratively updating the weight vectors such that the weight vectors move toward the cluster centers, performing a second iterative process for iteratively updating a second data structure utilizing results of the iterative updating of the first data structure, and determining, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set. The first data structure includes a lattice structure of weight vectors that create an approximate representation of a plurality of input data points. The weight vectors correspond to the same cluster centers of the input data points. A plurality of the weight vectors represents a single non-linear cluster. The method is an unsupervised method that is configured to be suitable for an on-line system.

Amended claim 24 recites a computer-readable program product including a computer program code embodied on a computer-readable medium, wherein executing the computer program code in a computer causes the computer to carry out a method. The method includes determining cluster centers in a first data structure, performing a first iterative process for iteratively updating the weight vectors such that the weight vectors move toward the cluster centers, performing a second iterative process for iteratively updating a second data structure utilizing results of the iterative updating of

the first data structure, and determining, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set. The first data structure includes a lattice structure of weight vectors that create an approximate representation of a plurality of input data points the weight vectors correspond to the same cluster centers of the input data points. The weight vectors correspond to the same cluster centers of the input data points. A plurality of the weight vectors represents a single non-linear cluster. The computer program is configured to carry out an unsupervised method that is configured to be suitable for an on-line system.

Amended claim 25 recites a computer. The computer includes first determination means for determining cluster centers in a first data structure, first performance means for performing a first iterative process for iteratively updating the weight vectors such that the weight vectors move toward the cluster centers, second performance means for performing a second iterative process for iteratively updating a second data structure utilizing results of the iterative updating of the first data structure, and second determination means for determining, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set. The first data structure includes a lattice structure of weight vectors that create an approximate representation of a plurality of input data points. The weight vectors correspond to the same cluster centers of the input data points. A plurality of the weight vectors represents a single non-linear cluster. The computer is configured to operate using an unsupervised method that is configured to be suitable for an on-line system.

Amended claim 26 recites a computer. The computer includes a first determination unit configured to determine cluster centers in a first data structure, a first performance unit configured to perform a first iterative process to iteratively update the weight vectors such that the weight vectors move toward the cluster centers, a second performance unit configured to perform a second iterative process to iteratively update a second data structure utilizing results of the iterative updating of the first data structure, and a second determination unit configured to determine, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set, the weight vectors correspond to the same cluster centers of the input data points. The first data structure includes a lattice structure of weight vectors that create an approximate representation of a plurality of input data points. A plurality of the weight vectors represents a single non-linear cluster. The computer is configured to operate using an unsupervised method that is configured to be suitable for an on-line system.

As will be discussed below, Guiver in view of Sirosh fails to disclose or suggest every claim feature recited in the claims, and therefore fails to provide the features of the claims discussed above.

Guiver generally relates to an apparatus and method for selecting a working data set for model development. Guiver discloses a data selection apparatus that augments a set of training examples with the desired output data. A data selection apparatus groups the augmented and normalized data set into related clusters using a clusterizer. (Guiver, Abstract; col. 2, lines 19-29)

It is readily apparent that Guiver is not proposing a new approach to clustering, but is using classical clustering algorithms to do this. In fact, the use of the term "SOM clusterizer" in Guiver is incorrect, or at least irregular, because the SOM's intended use is as a topology-preserving vector-quantization algorithm. From Sirosh, however, one of ordinary skill in the art would recognize that Guiver will not be able to find nonlinear data clusters in Guiver's data sets using the classical methods (*e.g.* SOM and K-means) proposed in Guiver.

Sirosh generally relates to an unsupervised identification of nonlinear data clusters in multi-dimensional data. Sirosh discloses a system including a vector quantization module, a weighted topology representing graph module, and an encoding module. The vector quantization module takes vector data inputs and extracts a group of inputs about a number of cluster centers, using a globally optimized clustering process. The weighted topology representing graph module creates a weighted graph of the vector space, using the cluster centers as nodes. The encoding module uses the weighted graph to recode the input vectors based on their proximity to the luster centers and the connectedness of the graph. The recoded vectors are re-input into the vector quantization module, and the process is repeated until termination, whereby the clusters identified may be highly non-linear in the original data space. (Sirosh, Abstract; col. 2, lines 6-59)

Assuming *arguendo* that the teachings of Guiver and the teachings of Sirosh could be combined, the combination fails to disclose or suggest every claim feature recited in the claims. Specifically, Guiver fails to disclose or suggest at least "wherein a plurality

of the weight vectors represents a single non-linear cluster" as recited in amended claim 13. Guiver discloses "input points that are close in the P dimension are mapped close together on the Q dimension lattice. Each lattice cell is represented by a neuron associated with a P dimensional adaptable weight vector. The match between each weight vector is computed with every input. (Guiver, col. 7, lines 4-9) However, Guiver fails to disclose or suggest "a plurality of the weight vectors represents a single non-linear cluster" as recited in amended claim 13. Sirosh fails to cure the deficiencies of Guiver.

Accordingly, Guiver in view of Sirosh fails to disclose or suggest every claim feature recited in amended claim 13.

Claims 14-23 are dependent upon amended claim 13. Accordingly, claims 14-23 should be allowed for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Claims 24-26

Claims 24-26 each have their own scope, but each contain recitations similar to those discussed above with regard to claim 13. Specifically, Guiver in view of Sirosh fails to disclose or suggest at least "wherein a plurality of the weight vectors represents a single non-linear cluster" as recited in claims 24-26.

Accordingly, Guiver in view of Sirosh fails to disclose or suggest every claim feature recited in claims 24-26; therefore, claims 24-26 should now be in condition for allowance.

CONCLUSION

In conclusion, Applicant respectfully submits that Guiver and Sirosh fail to disclose or suggest every claim feature recited in claims 13-26. The distinctions previously noted are more than sufficient to render the claimed invention unobvious. It is therefore respectfully requested that all of claims 13-26 be allowed, and this present application passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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Enclosures: Request for Continued Examination (RCE)